

PROJECT DESCRIPTION
GENERAL

THIS PROJECT INVOLVES THE MODIFICATION OF THE EXISTING TRAFFIC SIGNAL AT THE INTERSECTION OF HARBORVIEW AVE/ I-295 OFF-RAMP E1 AT TANGER OUTLETS ENTRANCE/ PRIVATE DRIVEWAY IN PRINCE GEORGE'S COUNTY. HARBORVIEW AVE/ I-295 OFF-RAMP E1 IS CONSIDERED TO RUN IN AN EAST/WEST DIRECTION.

THE SOUTH LEG (TANGER OUTLETS ENTRANCE) IS BEING ADDED TO THE INTERSECTION. THE EAST LEG (I-295 OFF-RAMP E1) IS BEING WIDENED TO PROVIDE A LEFT TURN IN TO THE SITE.

INTERSECTION OPERATION

THE EXISTING BASE MOUNTED CABINET/ CONTROLLER SHALL BE USED AT THIS LOCATION. THE INTERSECTION WILL OPERATE IN A FULLY ACTUATED MODE USING 6 NEMA PHASES. THERE WILL BE AN EXCLUSIVE/PERMISSIVE LEFT TURN PHASE FOR THE EAST AND WESTBOUND MOVEMENTS OF HARBORVIEW AVE/ I-295 OFF-RAMP. THE HARBORVIEW AVE/ I-295 OFF-RAMP THROUGH MOVEMENTS WILL OPERATE CONCURRENTLY WITH ACTUATED PEDESTRIAN MOVEMENTS ACROSS THE NORTH AND SOUTH LEGS OF THE INTERSECTION. THE TANGER OUTLETS ENTR./ PRIVATE DW MOVEMENTS WILL OPERATE IN A SIDE-STREET SPLIT PHASE MODE WITH AN ACTUATED PEDESTRIAN MOVEMENT ACROSS THE EAST LEG OF THE INTERSECTION.

CONTACT LIST

1. THE CONTACT PERSONS FOR THIS PROJECT ARE AS FOLLOWS:

MR. VENU NEMANI, ASSISTANT DISTRICT ENGINEER - TRAFFIC
PHONE: (301) 513-7404
MR. DUANE BERNARD, ASSISTANT DISTRICT ENGINEER - CONSTRUCTION
PHONE: (301) 513-7341
MR. TOM FOUNTAIN, ASSISTANT DISTRICT ENGINEER - MAINTENANCE
PHONE: (301) 615-7304
MR. VICTOR GRAFTON, UTILITY ENGINEER
PHONE: (301) 513-7350
MR. AVIJIT MAJI, CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7630
MR. EDWARD RODENHIZER, MANAGER, SIGNAL OPERATIONS
PHONE: (410) 787-7652

SPECIAL NOTES

1. ALL INTERNAL CABINET WIRING SHALL BE PERFORMED BY THE SHA SIGNAL SHOP. CONTRACTOR SHALL CONTACT ED RODENHIZER 72 HOURS PRIOR TO CONSTRUCTION.

2. APS WILL FUNCTION AS FOLLOWS:

FOR PRIVATE DRIVEWAY (AIRFORCE BUILDING - NORTH LEG)
A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON MESSAGE WILL BE "WAIT TO CROSS HARBORVIEW AVE/ I-295 OFF-RAMP E1".

B. WHEN WALK PHASE BEGINS, THE AUDIBLE SOUND WILL BE A RAPID TICK, WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

FOR TANGER OUTLET ENTRANCE (SOUTH LEG)
A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON MESSAGE WILL BE "WAIT TO CROSS TANGER OUTLETS ENTRANCE/ PRIVATE DRIVEWAY".

B. WHEN WALK PHASE BEGINS, THE AUDIBLE SOUND WILL BE A RAPID TICK, WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

FOR HARBORVIEW AVENUE/ I-295 OFF-RAMP (EAST LEG - NORTH SIDE AND SOUTH SIDE)
A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON MESSAGE WILL BE "WAIT TO CROSS HARBORVIEW AT I-295 OFF-RAMP E1".

B. WHEN WALK PHASE BEGINS, THE AUDIBLE SOUND WILL BE A RAPID TICK, WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

FOR HARBORVIEW AVENUE/ I-295 OFF-RAMP (EAST LEG - SOUTH SIDE)
A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON MESSAGE WILL BE "WAIT TO CROSS HARBORVIEW AT I-295 OFF-RAMP E1".

B. WHEN WALK PHASE BEGINS, THE AUDIBLE SOUND WILL BE A RAPID TICK, WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

GENERAL NOTES

1. VIDEO CAMERA LOCATION/ALIGNING SHALL BE COORDINATED WITH THE SHA ENGINEER.
2. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE AND CABINET LOCATIONS PRIOR TO INSTALLATION.

3. PAVEMENT MARKINGS DETAILED ARE PROPOSED AND ARE TO BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH MD-SHA STANDARDS. ALL OTHER PAVEMENT MARKINGS ARE TO BE CONSIDERED AS EXISTING.

4. GEOMETRICS SHALL BE CONFIRMED PRIOR TO THE INSTALLATION OF SIGNAL EQUIPMENT. ALL TRAFFIC SIGNAL FOUNDATIONS SHALL BE INSTALLED AT FINAL SIDEWALK OR CURB GRADE FOR CLOSED SECTIONS. HIGHEST ROADWAY PROFILE GRADE FOR OPEN SECTIONS. TO MEET CLEARANCES AS SPECIFIED IN MD 816.03, MD 818.01, MD 818.02, MD 818.04. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.

5. ALL UNDERGROUND AND OVERHEAD UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC AND ARE NOT TO BE CONSIDERED COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL EQUIPMENT WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE PROJECT ENGINEER IMMEDIATELY.

6. PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18 IN. FROM A 60 IN. x 60 IN. LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.

7. THE 10 FT. SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON, NOT CENTER TO CENTER OF POLE.

8. PUSHBUTTON ARROWS ARE TO BE PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.

9. THE LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SEC. 4E.09 & FIG 4E-2 AND THE NCHRP PUBLICATION "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE". IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.

10. ALL UNUSED CABLE SHALL BE REMOVED.

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY THE ADMINISTRATION.

NONE.

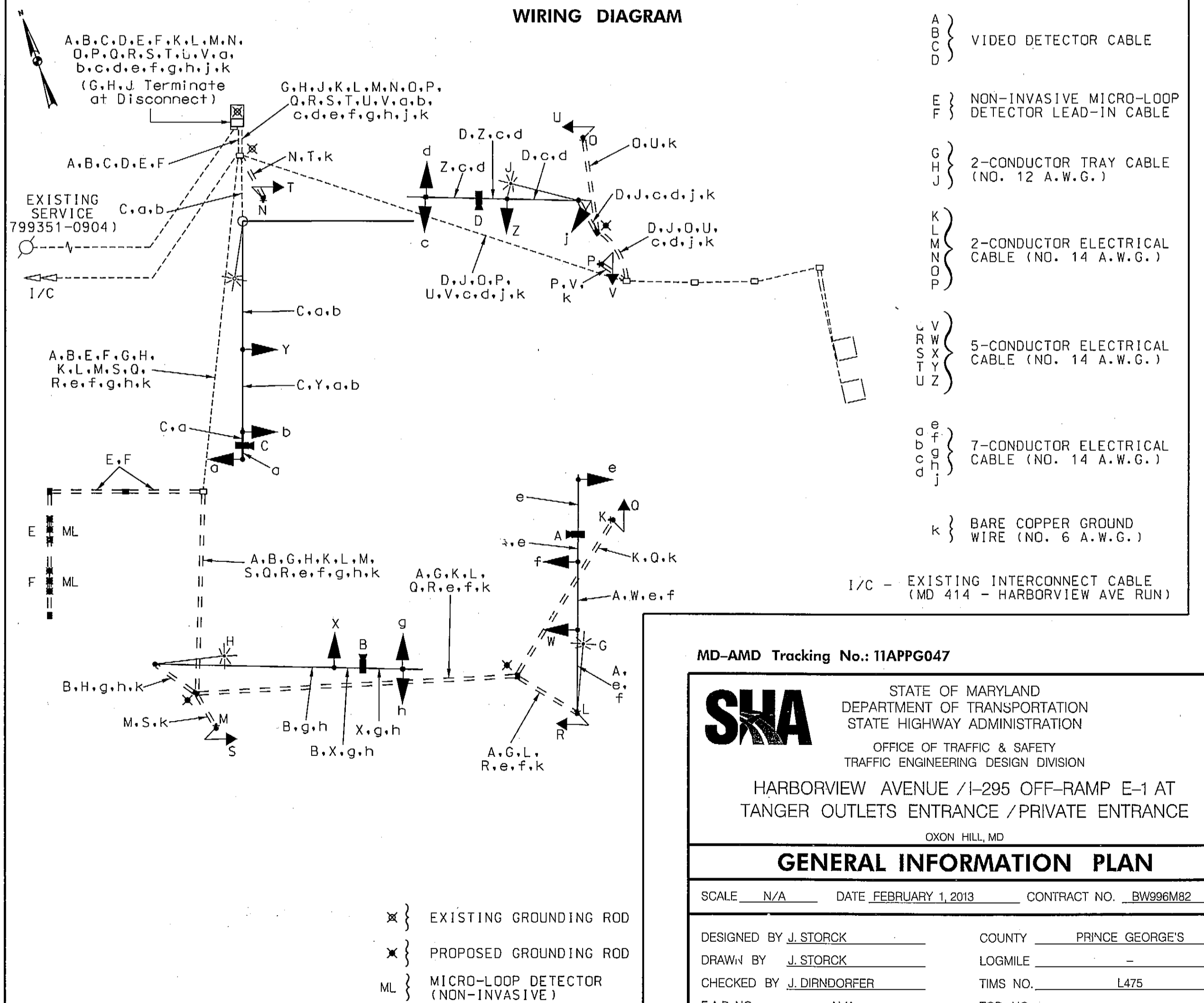
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

QUANTITY	UNITS	DESCRIPTION
1	LS	MAINTENANCE OF TRAFFIC
1	LS	MOBILIZATION
1	EA	MAST ARM EXTENSION PIECE FOR A 70 FT. MAST ARM
5	EA	10 FT. STEEL PEDESTAL POLE WITH BREAKAWAY BASE
1	EA	27 FT. STEEL MAST ARM POLE WITH 60 FT. MAST ARM
2	EA	27 FT. STEEL MAST ARM POLE WITH 70 FT. MAST ARM
3	EA	20 FT. LUMINAIRE ARM
3	EA	LED LAMP AND LUMINAIRE
6	EA	NEMA LOAD SWITCH
4	EA	VIDEO DETECTOR CAMERA (TERRA)
1025	EA	VIDEO DETECTOR CAMERA CABLE
1	LF	VIDEO DETECTOR CAMERA INTERFACE PANEL
2	EA	NON-INVASIVE PROBE (SET OF 3) WITH 500 FT. LEAD-IN CABLE
6	EA	AUDIBLE PEDESTRIAN PUSHBUTTON ASSEMBLY WITH PUSHBUTTON SIGN
1	EA	APS 2-WIRE CENTRAL CONTROL UNIT
6	EA	12 IN. 3-SECTION LED SIGNAL HEAD - MAST
1	EA	12 IN. / 8 IN. 4-SECTION (8 IN. R, Y, G, 12 IN. GA) LED SIGNAL HEAD - MAST
1	EA	12 IN. 4-SECTION LED SIGNAL HEAD - MAST
4	EA	12 IN. 5-SECTION (R, Y, G, YA, GA) LED SIGNAL HEAD - MAST
1	EA	12 IN. 5-SECTION STACKED (R, Y, G, YA, GA) LED SIGNAL HEAD - SIDE POLE
1	EA	16 IN. 1-SECTION, 1-WAY LED (COUNTDOWN) PEDESTRIAN SIGNAL HEAD - SIDE POLE
5	EA	16 IN. 1-SECTION, 1-WAY LED (COUNTDOWN) PEDESTRIAN SIGNAL HEAD - POST TOP
1	EA	24 IN. X 24 IN. R10-11(b) REGULATORY SIGN - MAST ARM
1	EA	30 IN. X 30 IN. R3-1 REGULATORY SIGN - MAST ARM
1	EA	30 IN. X 30 IN. R3-2 REGULATORY SIGN - MAST ARM
4	EA	30 IN. X 36 IN. R3-5 REGULATORY SIGN - MAST ARM
3	EA	18 IN. X 18 IN. QM1-3 SIGN - GROUND
3	EA	24 IN. X 30 IN. R4-7 REGULATORY SIGN - GROUND
78	LF	4 IN. X 4 IN. WOOD SIGN SUPPORTS
4.5	CY	TEST PIT EXCAVATION
6	EA	HANDHOLE
830	LF	2-CONDUCTOR TRAY CABLE (NO.12 AWG)
1255	LF	2-CONDUCTOR CABLE (NO. 14 AWG)
1420	LF	5-CONDUCTOR CABLE (NO. 14 AWG)
2230	LF	7-CONDUCTOR CABLE (NO. 14 AWG)
575	LF	BARE COPPER GROUND WIRE (NO. 6 AWG)
100	LF	2 IN. PVC CONDUIT [SCHEDULE 80] - TRENCHED
275	LF	3 IN. PVC CONDUIT [SCHEDULE 80] - TRENCHED
40	LF	3 IN. PVC CONDUIT [SCHEDULE 80] - BORED
170	LF	4 IN. PVC CONDUIT [SCHEDULE 80] - BORED
18.5	CY	CONCRETE FOUNDATION FOR TRAFFIC SIGNAL EQUIPMENT
3	EA	GROUND ROD - 3/4 IN. X 10 FT. LENGTH
450	LF	12 IN. WHITE THERMOPLASTIC PAVEMENT MARKING - CROSSWALK
170	LF	24 IN. WHITE THERMOPLASTIC PAVEMENT MARKING - STOP LINE
1	EA	RELOCATE EXISTING SIGNAL HEAD
1	EA	REMOVE EXISTING SIGN - MAST ARM
1	EA	REMOVE AND DISPOSE OF EXISTING CONCRETE FOUNDATION 12 INCHES BELOW GRADE
1	LS	REMOVE EXISTING SIGNAL EQUIPMENT
1	EA	ADJUST HANDHOLE FRAME AND COVER

PHASE CHART

	1	2	46	3	4	5	6	7	8	9	10	11	12	13,14	15,16	17,18
PHASE 1 AND 5	+GR	+GR	+GR	R	+GR	+GR	R	R	R	R	R	R	R	DW	DW	DW
1 AND 5 CHANGE TO 1 AND 6, 2 AND 5, OR 2 AND 6																
PHASE 1 AND 6	+GG	+GG	+GG	G	R	R	R	R	R	R	R	R	R	DW	DW	DW
1 CHANGE	+YG	+YG	+YG	G	R	R	R	R	R	R	R	R	R	DW	DW	DW
PHASE 2 AND 5	R	R	R	R	+GG	+GG	G	R	R	R	R	R	R	DW	DW	DW
5 CHANGE	R	R	R	R	+YG	+YG	G	R	R	R	R	R	R	DW	DW	DW
PHASE 2 AND 6	G	G	G	G	G	G	G	R	R	R	R	R	R	DW	DW	DW
2 AND 6 CHANGE	G	G	G	G	G	G	G	R	R	R	R	R	R	DW	DW	DW
PHASE 2 ALT AND 6 ALT	G	G	G	G	G	G	G	R	R	R	R	R	R	WK	WK	DW
PED CLEARANCE	G	G	G	G	G	G	G	R	R	R	R	R	R	FL/DW	FL/DW	DW
2 ALT AND 6 ALT CHANGE	Y	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW	DW
PHASE 3	R	R	R	R	R	R	R	+G	+G	G	R	R	R	DW	DW	DW
3 CHANGE	R	R	R	R	R	R	R	Y	Y	Y	R	R	R	DW	DW	DW
PHASE 3 ALT	R	R	R	R	R	R	R	G	G	G	R	R	R	DW	DW	WK
PED CLEARANCE	R	R	R	R	R	R	R	G	G	G	R	R	R	DW	DW	FL/DW
3 ALT CHANGE	R	R	R	R	R	R	R	Y	Y	Y	R	R	R	DW	DW	DW
PHASE 4	R	R	R	R	R	R	R	R	R	R	G	G	G	DW	DW	DW
4 CHANGE	R	R	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW	DW
FLASHING OPERATION	FLY	FLY	FLY	FLY	FLY	FLY	FLY	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK

WIRING DIAGRAM



MD-AMD Tracking No.: 11APP0047

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION
HARBORVIEW AVENUE / I-295 OFF-RAMP E-1 AT
TANGER OUTLETS ENTRANCE / PRIVATE ENTRANCE
OXON HILL, MD

GENERAL INFORMATION PLAN

SCALE: N/A DATE: FEBRUARY 1, 2013 CONTRACT NO.: BW996M82

DESIGNED BY: J. STORCK COUNTY: PRINCE GEORGE'S
DRAWN BY: J. STORCK LOGMILE: -
CHECKED BY: J. DIRNDORFER TMS NO.: L475
F.A.P. NO.: N/A TOD NO.: -

TS NO. 4081A DRAWING: SG - 02 OF 02 SHEET NO. 2 OF 2

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The Traffic Group, Inc.
Suite H
9900 Franklin Square Drive
Baltimore, Maryland 21236
410-931-6600
1-800-583-8411
Fax 410-931-6601
"Merging Innovation and Excellence"®

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE
PREPARED OR APPROVED BY ME, AND THAT I
AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 31757
EXPIRATION DATE 6/28/2013

